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| EXAMINER<br>HUSON, MONICA ANNE  |             |                        |                     |                  |
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/827,494  
Filing Date: April 19, 2004  
Appellant(s): ZHANG ET AL.

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Walter Steinkraus  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 11 April 2008 appealing from the Office action mailed 17 September 2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

|         |           |         |
|---------|-----------|---------|
| 5522961 | Leonhardt | 06-1996 |
| 6073540 | Garrett   | 06-2000 |
| 3766358 | Gass-Erb  | 10-1973 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 17, 20, 22, 2-5, 7-9, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Leonhardt (U.S. Patent 5,522,961). Regarding Claim 17, Leonhardt shows that it is known to carry out a method of forming a medical device (Abstract) comprising the steps of placing a parison in a mold having a cavity with a wall form substantially conforming to the desired shape of said device (Column 2, lines 41-43); immersing the mold in a heated liquid fluid to heat the parison (Column 2, lines 43-45; heated liquid fluid=water); pressurizing the parison to radially expand the parison to contact the walls of the mold cavity (Column 2, lines 47-51), wherein the mold cavity wall contains at least one through-hole therein through which the heated liquid fluid enters the mold cavity to directly contact the parison when the mold is immersed in the heated fluid and through which heated liquid fluid that has entered the mold cavity is expelled therefrom when the parison is radially expanded (Column 3, lines 60-64; It is interpreted that the heated liquid fluid enters through elements 46, and is expelled back through elements 46 when the parison is expanded, along with any air existing in the mold.).

Regarding Claims 20 and 3, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein the mold cavity wall contains a plurality of said through-holes therein (Figure 2, elements 46).

Regarding Claim 22, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein the heated liquid fluid is water (Column 4, lines 27-30).

Regarding Claims 2, 4, and 5, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein the through holes are formed as longitudinally-oriented slots which are arranged in a plurality of circumferentially spaced columns (Figure 2, elements 46; the elements 46 are slot-shaped in the longitudinal direction, left to right, forming columns of space around the circumference of the mold).

Regarding Claims 7-8, Leonhardt shows the process as claimed as discussed in the rejection of Claims 17 and 5 above, including showing four of said circumferentially spaced column of slots (Figure 2, elements 46; note that there are 4 elements 46).

Regarding Claim 9, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein the at least one through-hole has a dimension at the mold cavity wall inner surface which does not allow substantial penetration of the parison material therethrough when heated to the temperature of the heated fluid and pressurized at a pressure sufficient to expand the parison to contract the mold cavity wall (Column 4, lines 30-39; It is interpreted that the elements 46 are large enough for the passage of heated fluid and air, however not large enough to warrant concern by Leonhardt that the parison would be expanded through the elements 46).

Regarding Claims 13-14, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein the cavity has a diameter is 10-13mm (Column 4, lines 4-7).

Claims 6, 10-12, and 15-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Leonhardt.

Regarding Claim 6, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including showing circumferentially-placed slots. He does not particularly show the slots being staggered longitudinally. However, the particular placement of an element is known to be an obvious matter of design choice (See MPEP 2144.04 (IV)(C)). Therefore, It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to rearrange the slots of Leonhardt to be longitudinally staggered and circumferentially-placed, in order to design the mold according to customer specifications (note that Leonhardt teaches varying the design of the slots, as some elements 46 are longitudinally oriented and other elements 46 are vertically oriented).

Regarding Claims 10-12, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including a method wherein a mold includes a through hole. He does not particularly disclose a shape or pattern involving the through

hole. However, changes in shape are known to be a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration was significant (See MPEP 2144.04 (IV)(B)). Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use any particular shape and pattern associated with the through hole in order to accommodate particular customer specifications.

Regarding Claims 15-16, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, including showing a cavity portion with a through hole with a certain dimension. He does not discuss exclusive dimensions of the hole, however, where the general conditions of a claim (a through hole with an existing dimension relative to a catheter mold) are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (See MPEP 2144.05 (II)(A)). Therefore, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to arrive at optimal dimensions for the through hole, such as those claimed, in order to achieve optimal fluid transfer between the mold, parison, and fluid environment.

Claims 18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonhardt, in view of Gass-Erb (U.S. Patent 3,766,358).

Regarding Claim 18, Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, but he does not show agitating the fluid while the mold is immersed therein. Gass-Erb shows that it is known to carry out a method including a step comprising agitating a heated fluid while an object is immersed therein (Column 7, lines 32-35). Gass-Erb and Leonhardt are combinable because they are concerned with a similar technical field, namely, methods of heating objects using immersion techniques. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Gass-Erb's agitated heating bath in Leonhardt's molding process in order to provide equal temperature distribution throughout the heating fluid (See Gass-Erb, Column 1, lines 50-54).

Regarding Claim 21, Leonhardt shows that it is known to carry out a method of blowing a balloon (Abstract) by immersing a mold containing a hollow parison of thermoplastic polymer material into a heated liquid fluid and pressurizing the parison (Column 2, lines 41-45, 47-51). Leonhardt does not show agitating the fluid while the mold is immersed therein. Gass-Erb shows that it is known to carry out a method including a step comprising agitating a heated liquid fluid while an object is immersed therein (Column 7, lines 32-35). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Gass-Erb's agitated heating bath in Leonhardt's molding process in order to provide equal temperature distribution throughout the heating fluid (See Gass-Erb, Column 1, lines 50-54).

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leonhardt, in view of Garrett (U.S. Patent 6,073,540). Leonhardt shows the process as claimed as discussed in the rejection of Claim 17 above, but he does not show vibrating the molding apparatus while the mold is immersed in the heated fluid. Garrett shows that it is known to carry out a method including vibrating the article while it is immersed in the heated fluid (Column 3, lines 1-8). Garrett and Leonhardt are combinable because they are concerned with a similar technical field, namely, methods of heating objects using fluid. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Garrett's article vibration technique during Leonhardt's molding process in order to effect more uniform heat transfer (See Garrett, Column 3, lines 6-7).

## **(10) Response to Argument**

### **(1)**

In view of appellant's arguments, the rejection under 35 USC 112(1<sup>st</sup>) has been withdrawn.

(2)

In view of appellant's arguments, the rejection under 35 USC 112(2<sup>nd</sup>) has been withdrawn.

(3)

Appellant contends that Leonhardt does not show the claimed method because his holes would not permit water to enter the cavity and contact the parison. This is not persuasive because although appellant has alleged that the Examiner's interpretation of Leonhardt, i.e. that his holes would allow for water to pass through, is "clearly incorrect", there is no evidence to show that the Examiner's interpretation of Leonhardt is faulty. Appellant gives three merely hypothetical scenarios that seem to suggest that holes to allow water in to contact the parison would not allow the molding process to continue properly, however the fact patterns presented are substantially speculative and do not present any conclusive evidence to show any error in the Examiner's interpretation that Leonhardt's holes would be capable of allowing water to pass through. Appellant seems to contend that since Leonhardt only mentions air passing through the holes, the lack of mentioning of whether or not water is passed through the holes is an explicit teaching that water does not pass through the holes. This is not persuasive because the reason of why Leonhardt may not have mentioned water passing through the holes lies only with the author of Leonhardt's specification. It is maintained that water will flow at its own will, and if there is a hole in something that is immersed in a water bath, the water will inherently flow through the hole.

(4)

Appellant does not particularly address claims 6 and 10-12.

With regard to Claim 15, appellant contends that Leonhardt does not suggest the particularly claimed dimensions of the holes because his holes have different functions. This is not persuasive because firstly, it is maintained that Leonhardt's holes *do* carry out the same function as those which are claimed. Further, appellant has not addressed why varying the dimensions of the holes would not be an obvious option to



one of ordinary skill in the art, in their experimentation to find the most desired or optimum sized holes.

**(5)**

Appellant contends that Gass-Erb and Leonhardt do not suggest the claimed invention because Gass-Erb's immersed object is not analogous to a balloon mold. This is not persuasive because, as previously noted in the Advisory Action, Gass-Erb was only cited to show the concept of agitating a heated fluid while an object is immersed therein. It is maintained that Gass-Erb shows this concept, regardless of what kind of object is immersed in the heated fluid. Appellants do not specifically point out any allegations of why it would not have been obvious to use Gass-Erb's agitated fluid during Leonhardt's molding process.

**(6)**

Appellant contends that Garrett and Leonhardt do not suggest the claimed invention because Garrett's vibrated object is not analogous to a balloon mold. This is not persuasive because Garrett was only cited to show the concept of vibrating objects which are immersed in a liquid. It is maintained that Garrett shows this concept, regardless of what kind of object is immersed in the heated fluid. Appellants simply conclude that looking to Garrett for a teaching of vibrating an immersed object while carrying out Leonhardt's molding process, using an immersed object, "would never happen". This is not persuasive because both disclosures speak of heating immersed objects. Garrett provides benefits of vibrating the immersed objects, such as improved heat transfer; it is maintained that these benefits would be equally applicable and appreciable to Leonhardt's immersed object.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Monica A Huson/

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